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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,994	07/20/2005	Matthew M Deangelis	20030096	2610

22500 7590 03/05/2007
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EXAMINER

LOBO, IAN J

ART UNIT	PAPER NUMBER
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3662

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/542,994	DEANGELIS ET AL.	
Examiner	Art Unit		
Ian J. Lobo	3662		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 02 February 2007.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 7 and 9-16 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 7, 9, 10, 11, 15 and 16 is/are rejected.

7) Claim(s) 12-14 is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) Notice of Informal Patent Application

6) Other: _____ .

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 2, 2007 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 7, 10, 11, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flanagan et al ('978) in view of Pauer ('976) and Kompanek ('044).

Per claim 7, the patent to Flanagan et al discloses an acoustic projector that includes a cylindrical shell (15, 16) and a driver (13) mounted within the shell segment.

The difference between claim 7 and Flanagan et al is the claim specifies "an even number of longitudinally joined cylindrical shells" and "an even number of spaced drivers within each shell" where each of the drivers are in a "longitudinal spaced relationship from the adjacent driver".

Pauer discloses an acoustic projector (see Fig. 1) where a shell (12) includes an even number of longitudinal spaced drivers (14). Such a configuration, as suggested by Pauer, provides acoustic energy radiation at low frequency and high amplitude.

Kompanek discloses a sonar projector that includes an embodiment (see Fig. 5) having an even number of longitudinally joined cylindrical shell segments. By including a plurality of such shell segments a sonar array is achieved which produces omnidirectional or directional energy, provides large amounts of acoustical power at high efficiencies and at controlled frequencies (col. 5, lines 49-57).

Therefore, in view of Kompanek, it would be obvious to one of ordinary skill in the art to modify Flanagan et al by utilizing an even number (Kompanek shows an even number) of cylindrical shell segments joined together so as to provide a sonar projector that increases the power at high efficiencies and controlled frequencies and further, in view of Pauer, it would be obvious to also modify Flanagan et al by utilizing an even number of longitudinal spaced drivers within each shell, so as to provide acoustic energy at low frequencies and high amplitude. Claim 7 is so rejected.

Per claims 10 and 16, the claimed combined length of the drivers being "between 70 and 90 percent" of the longitudinal length of the shell segment, and "two shell segments containing two longitudinally spaced drivers", respectively, although not expressly disclosed in Flanagan et al, however, are a matter of design choice that one of ordinary skill in this art would find obvious.

Per claim 11, see the slot (14) in Flanagan et al.

Per claim 15, see Flanagan et al, element (23).

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Flanagan et al in view of Pauer and Kompanek as applied to claim 7 above, and further in view of Osborn et al ('222).

It is pointed out that the patent to Osborn et al on col. 4, lines 24+, teaches that shell materials may often include any one of aluminum, epoxy/graphite composites, glass fiber/epoxy composites, steel, titanium, etc. To have modified Flanagan et al's shell material by substituting a graphite epoxy composite material for aluminum or steel would have been obvious to one of ordinary skill in the art. Claim 9 is so rejected.

Allowable Subject Matter

5. Claims 12-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Applicant's arguments with respect to claim 7 have been considered but are moot in view of the new ground(s) of rejection.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian J. Lobo whose telephone number is (571) 272-6974. The examiner can normally be reached on Monday - Friday, 6:30 - 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H. Tarcza can be reached on (571) 272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Ian J. Lobo
Primary Examiner
Art Unit 3662

ijl